

REMARKS

Claims 1 - 23 and 25 - 40 are in the application and are presented for consideration. By this amendment, claim 23 has been amended. Claims 1 - 22 have been withdrawn. Claims 25 - 40 are withdrawn. However, consideration of claims 25 - 40 is requested as the claims depend from claim 23 and claim further features directed to the invention of group IV. Further, as claim 23 is believed to be an allowable and is generic at least to the combination of claims 25 - 40, allowance of all claims depending upon claim 23 is proper. In view of the foregoing amendments and these remarks, it is submitted that the objections raised in the Office Action have been overcome.

Amendments to the Drawings/Specification

The Office Action objects to the disclosure on the basis that the reference character 24 was used to designate both the gravity feed line and a steel frame on page 14 (it is assumed the objection is to page 14, not page 16 as stated). Page 14, line 10 has been amended to refer to "gravity feed line 23A" as shown in Figure 2.

The Office Action objects to page 16 (it is assumed the objection is to page 16, not page 14 as stated), line 6 on the basis that reference character 20 should be 30. Page 16 has been amended to correct this labeling.

In addition, Applicant has made the following further amendments to the disclosure to correct minor typographical errors:

- Page 15, line 12 corrects "fro m" to "from";

- Page 15, line 34 inserts "to" after "Owing";
- Page 16, line 23 corrects "58A & 58B" to "52A and 52B";

Formal Claim Issues

The Office Action rejects claims 23 and 24 under 35 USC 112, second paragraph as being indefinite for inclusion of "such as" language. This language has been removed from claim 23.

The Office Action rejects claim 24 for the "means for temporarily reducing weight held by the weight bearing cylinder". Claim 24 has been cancelled.

Amendments to the Claims

Claim 23 has been amended to more fully describe the structure and operation of the hydraulic cylinder arrangement. Claim 24 has been cancelled. Accordingly, only claim 23 is presently pending and not withdrawn from consideration. However, Applicant requests consideration of the withdrawn dependent claims 25-40 upon allowance of generic claim 23.

Patentable Subject Matter and the Prior Art

35 USC 103 (a) Objections

The Office Action rejects claims 23 and 24 as obvious in view of US Patent

4,240,507 (Hokkanen) and US Patent 5,560,429 (Needham). Applicant submits that claim 23 as amended as well as claims 25-40 patentably define over these references based on the following discussion of the subject technology and the cited references.

The Present Invention

The subject technology according to the present invention is directed to a fire-fighting bucket for suspension and operation from a helicopter that enables an operator to deliver a full or partial load of fire retardant from the bucket. In addition, the subject technology enables an operator to fully or partially re-fill the bucket based on the weight of the bucket. This system has particular advantages as compared with the prior art. The invention provides an effective technology for fire-fighting by providing the operator/pilot superior control in the volume of fire retardant being delivered to a specific location. Thses advantages contributes to

a) improved helicopter efficiency by potentially reducing the operating time of helicopter by reducing flight distance (hence improved fire-fighting economics) by being able to control the amount of fire retardant delivered to a particular location and

b) improved safety to the operator by effectively being able to control the total volume (and hence weight) of fire-retardant in the bucket directly from within the helicopter. That is, by being able to effectively mange the weight of fire-retardant loaded into the bucket, the invention allows the operator/pilot to more effectively match the weight of the bucket to the flight conditions (eg. the lifting capacity of the helicopter and/or the

current flight conditions such as operating altitude and/or atmospheric temperature) which contributes to improved safety. Importantly, the operator/pilot can adjust the lifting capacity of the bucket from the helicopter.

In addition, the subject technology provides an effective hydraulic system for the operation of the system that does not require hydraulic pumps. This effective hydraulic system without the use of such hydraulic pumps decreases the capital and maintenance costs of the system while increasing the reliability of the system.

More specifically, the subject technology is distinguished over past systems by the design of the hydraulic system that utilizes the combination of fire-retardant weight in the bucket, the weight of fire retardant acting on the valves in conjunction with a weight bearing cylinder, a valve cylinder, a recharge cylinder and hydraulic valves that enable effective full or partial filling of the bucket and full or partial emptying of the bucket without hydraulic pumps.

The prior art does not teach nor reasonably suggest such a system.

US Patent 4,240,507 (Hokkanen)

Hokkanen describes a fire fighting bucket that utilizes a hydraulic cylinder and spring system to effect opening and closing of a valve. Importantly, the Hokkanen system allows only a single discharge of water from the cistern and furthermore, only allows manual adjustment of the volume of water in the cistern by adding or removing stoppers. Hokkanen fails to teach or suggest the combination of weight bearing, valve and recharge

cylinders as presently claimed.

US Patent 5,560,429 (Needham)

Needham is cited as teaching an open bucket. As with Hokkanen above, the Needham system allows only a single discharge of water from the bucket. Needham fails to teach or suggest the combination of weight bearing, valve and recharge cylinders as presently claimed.

Conclusion

In summary, the prior art does not teach or reasonably suggest a fire-fighting bucket and control having either the structure or function of the system as presently claimed. The rejection does not present a prima facie case of obviousness as to the subject matter as now claimed. The prior art as a whole does not render the claimed combination obvious.

Favorable reconsideration of the application is therefore requested.

Respectfully submitted
for Applicant,



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SHOULD ANY OTHER FEE BE REQUIRED, THE PATENT AND TRADEMARK OFFICE IS HEREBY REQUESTED TO CHARGE SUCH FEE TO OUR DEPOSIT ACCOUNT 13-0410.

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